

ZOOLOGY.—*Two new primnoid corals of the subfamily Calyptrophorinae (Coelenterata: Octocorallia).*<sup>1</sup> FREDERICK M. BAYER, U. S. National Museum.

The vast collections of marine animals obtained by the United States Fish Commission steamer *Albatross* are still yielding new species, two of which are described below. Among the octocorals this is not surprising for a considerable part of the collection has not yet been studied. The first species herein described, taken by the *Albatross* during its Hawaiian cruise (1902), was erroneously included with a previously described species in the original report on the Hawaiian Alcyonaria (Nutting, 1908); the other is from the incomparable collection assembled during the Philippine cruise of the *Albatross* (1906-1910). No complete report upon the collections of the latter expedition has yet been made.

It is a great pleasure indeed to dedicate these two species to Austin H. Clark, retiring curator of echinoderms, U. S. National Museum, and his charming wife, Leila Forbes Clark, librarian of the Smithsonian Institution.

Genus *Calyptrophora* Gray

*Calyptrophora* J. E. Gray, 1866, p. 25.

*Diagnosis*.—Primnoids with branching dichotomous, in one plane or bushy; or lyrate, in one or two parallel planes; or partly in whorls, partly dichotomous. Zooids arranged in whorls, with their mouths directed upward or downward; body scales reduced to two pairs of large, curved plates which are either fused to form two solid rings, or are separate; adaxial buccal (marginal) scales present or absent; no more than one pair of infra-basal scales between the basal body pair and the rind scales. The operculum is well developed, consisting of eight large scales. The spicules of the stem rind are more or less elongate, flattened scales or plates, in one layer.

*Genotype*.—*Calyptrophora japonica* Gray (by monotypy).

*Calyptrophora clarki*, n. sp. Fig. 1

*Calyptrophora japonica* Gray, Nutting, 1908, p. 578 (part).

Not *Calyptrophora japonica* Gray, 1866, p. 25, fig. 1.

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*Diagnosis*.—Branching dichotomous, in one plane. Zooids facing apically; both pairs of body scales fused to form solid rings; basal ring with a pair of long, slender, finely serrate spines; buccal ring with two broad, bladlike, finely serrate processes, which are occasionally bifid or trifid, sometimes completely divided to form four or six separate processes. A pair of well-defined infra-basal scales is present.

*Description*.—The colony is branched dichotomously, in one plane; the axis is longitudinally grooved and has a golden luster. The zooids (Fig. 1, *D*), which are 2.25-2.50 mm long including the buccal spines (measured parallel to the branch), occur in whorls of four or five (Fig. 1, *A*), and face upward; in 3 cm of branch length there are from 12 to 14 whorls. The zooid body is surrounded by two pairs of large sclerites fused to form rings. The basal ring (Fig. 1, *E*) bears on its free edge a pair of long, slender, finely serrated spines; the buccal ring (Fig. 1, *F*) has two broad, bladlike processes which are sometimes divided more or less completely into two or three points or separate spines. A pair or narrow, curved infra-basals connects the basal ring with the stem scales. Adaxial buccal (marginal) scales are absent. The operculum is high and projects prominently from the buccal ring. The abaxial operculars are the largest, roughly triangular in shape and with a moderately strong inner keel; the adaxials are about half as large and more nearly perfect triangles; the outer lateral and inner lateral operculars are intermediate in size and more or less asymmetrical in outline due to the broadly rounded inner margin which overlaps the edge of the adaxially adjacent scale. The apical margins of the operculars are usually serrate, and in some zooids are divided into several lobes or low points (Figs. 1, *B*, *C*). The spicules of the stem rind are elongate scales without external ridges.

*Type*.—U.S.N.M. no. 25370.

*Locality*.—Hawaiian Islands: Ukula Point, Kauai Island, bearing north 65° 30', west 7.4 miles, 508-557 fathoms, gray sand and Foraminifera, bottom temperature 40° F., June 17, 1902 (*Albatross* station 4007).

*Paratype*.—U.S.N.M. no. 43139; Hawaiian Islands.

*Remarks*.—In habit, *Calyptrophora clarki* is

readily distinguishable from *C. japonica* Gray by its regularly dichotomous instead of lyrate branching. Most zooids of *C. clarki* are at once separable from those of *C. japonica* by the two broad processes of the buccal ring; there is, however, much variation among individuals, even of the same colony, in the character of the buccal spines, and though there are ordinarily but two broad processes, there may occasionally be four, and sometimes even six. None of the specimens of *C. japonica* I have examined show six buccal spines. Both the buccal and the basal spines of *C. clarki* are proportionally much longer than those of *C. japonica*, except perhaps for Versluys' specimen no. 3 of his "form B" (1906, p. 118, figs. 166-168), which is probably not *C. japonica* at all but something close to the present species.

Genus *Narella* Gray

*Narella* J. E. Gray, 1870, p. 49.  
*Stachyodes* + *Calypterinus* Th. Studer [and E. P. Wright], 1887, p. 49; E. P. Wright and Th. Studer, 1889, pp. xlvi, 53, 54.

*Diagnosis*.—Primnoïds mostly branched dichotomously, in one plane or bushy. Zooids arranged in whorls, with their mouths directed downward; body scales three pairs of large, curved plates, of which the basal pair may meet adaxially to form a closed ring (in one species the buccal pair also); adaxial buccal (marginal) scales are frequently present in one or more pairs. The operculum consists of eight large scales. Spicules of the stem rind variable, elongate or scalelike, in one or two layers.

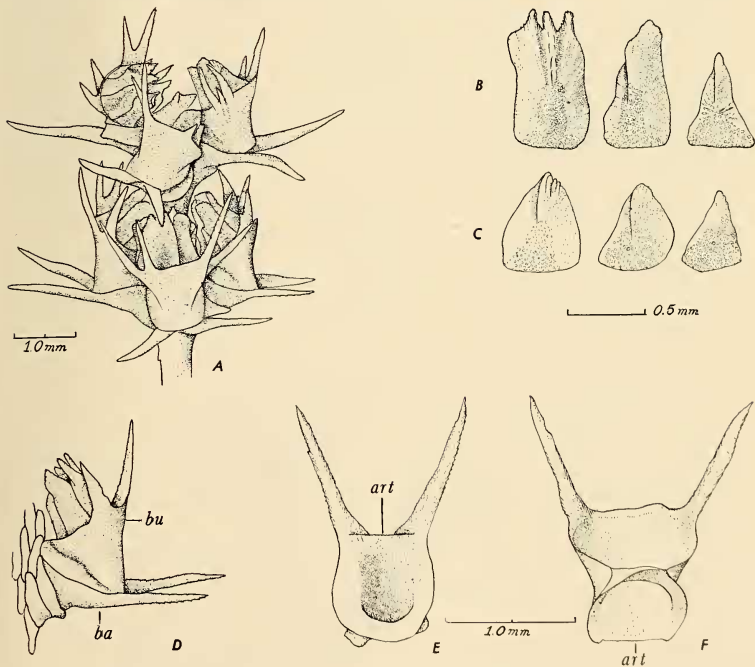


FIG. 1.—*Calyptrophora clarki* n. sp. A, Two distalmost whorls from the type specimen; B, three opercular scales, abaxial, inner lateral and adaxial, of the large, laciniate type; C, the same, of the small type; D, typical zooid, side view; E, basal scale ring; art, articulating ridge; F, buccal scale ring; art, articulating ridge which rides on that of the basal ring.

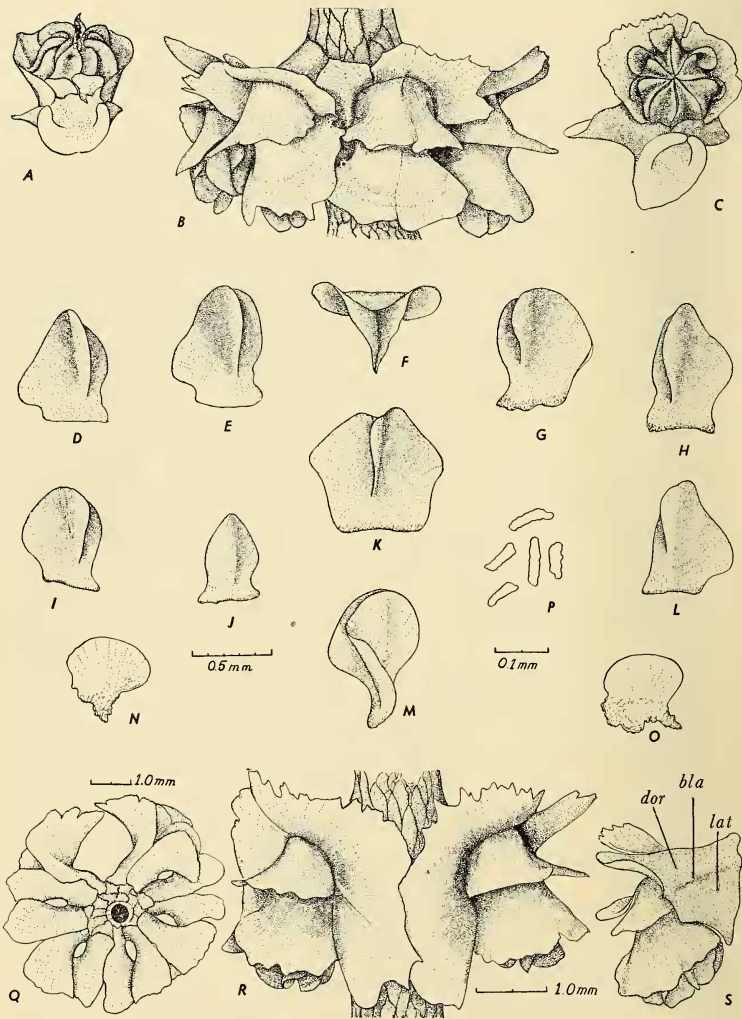


FIG. 2.—*Narella leilae* n. sp.: A, Adaxial view of zooid showing adaxial buccal scales; B, a whorl of normal zooids; C, opercular view of zooid; D–M, opercular scales; F, K, M, apical, inner face, and side view of major abaxial opercular scale; N, O, adaxial buccal scales (scale at J applies to all opercular scales); P, small flattened rods from the tentacles (scale applies only to P); Q, zooid whorl from above, showing worm tunnel (scale applies only to Q); R, zooid whorl from side, showing “arcade polyps” with abnormally expanded basal scales (scale applies to A–C, R, S); S, normal zooid from the side, showing: dor, “dorsal” and lat, lateral regions of basal scale; and bla, the basolateral angle which separates the two.

*Genotype*.—*Primnoa regularis* Duchassaing and Michelotti, 1860 (by monotypy).

*Remarks*.—As Miss Deichmann (1936, p. 168) points out, *Narella* clearly has priority over *Stachyodes*. The genus *Calypterinus* was established for a specimen with abnormal polyps due to a polychaete commensal. Calyptrophorines, especially *Narella*, are frequently infested with worms which cause adjacent polyps along one side of the stem to form greatly expanded basal scales which produce a sort of arcade in which the worm makes its home (Fig. 2, *Q, R*).

*Narella leilae*, n. sp. Fig. 2

*Diagnosis*.—Branching lateral-dichotomous, in one plane. Zooids small, 2.0–2.5 mm long, facing basally; only basal scale pair meeting adaxially to form a ring; free margins of all three body-scale pairs broadly expanded but not forming long, projecting points; free lateral border of each basal scale with a downward and forward projecting angle; basal scale distinctly divided into dorsal and lateral regions by a basolateral angle. Operculum low, the individual scales broad, with a high inner keel.

*Description*.—The type consists of three fragments, the largest of which is about 70 mm tall and twice branched dichotomously. In the proximal part the axis is a little flattened in the plane of branching, oval in the lowest part of the type specimen, becoming almost round in the distal-most tips; it is longitudinally grooved, and of a brownish-yellow color with moderate luster. The downward facing zooids (Fig. 2, *S*) are 2.0–2.5 mm long (measured parallel to the branch), arranged in whorls of four to six (Fig. 2, *B*), of which 10–12 occur in 3 cm of axial length. The zooid body is surrounded by three pairs of large scales, of which only the basal pair meet adaxially to form a ring; the free edges of all three pairs are broadly expanded, those of the basal and medial pairs more or less reflexed while that of the buccals is curved a little inward; basals bent along a definite basolateral angle which divides the scale into dorsal and lateral regions; the free lateral edge of the basal scale has a forward and downward projecting angle (Fig. 2, *S*). The operculum is very low; the scales are broad, the largest abaxial almost pentagonal in face view (Fig. 2, *K*), and each is furnished with a very high keel on the inner face and corresponding groove on the outer (Fig. 2, *D–M*). One pair of adaxial buccals is present (Fig. 2, *A, N, O*). The tentacles contain very small (0.04–0.07 mm) flat rods (Fig. 2, *P*).

The coenenchyma scales are irregular, rather elongate plates, those nearest to zooids often with a high, thin longitudinal crest.

*Type*.—U.S.N.M. no. 49724.

*Locality*.—Off Kapoposang Light, Straits of Macassar, lat. 4° 43' 22" S., long. 118° 53' 18" E., 400 fathoms, hard bottom, bottom temperature 43.3° F., December 28, 1909 (*Albatross* station 5664).

*Additional record*.—Off Gomomo Island, Pitt Passage, lat. 1° 53' 30" S., long. 127° 39' 00" E., 400 fathoms, coral, rock, soapstone, (no temperature data), December 3, 1909 (*Albatross* station 5635).

*Remarks*.—*Narella leilae*, n. sp., shows a certain resemblance to *N. clavata* (Versluys) in its closed basal scale pair and definite basolateral angles; the development of abnormal "arcade polyps" (Fig. 2, *Q, R*) induced by polychaete commensals is similar to that of *Narella allmani* (Wright and Studer). *Narella leilae* differs from *N. clavata* in its smaller zooids and exceptionally low operculum, its thinner and more delicate body scales, and in absence of a high dorsal crest on the basals; from *N. allmani* it differs in having adaxially closed basal scales, the buccals not being drawn out into projecting points, and in the much broader opercular scales.

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